



City of Eugene, Oregon



## TMDL Implementation Plan

*Submitted to  
Oregon Department of  
Environmental Quality*

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## **EXECUTIVE SUMMARY**

The Willamette River and numerous tributaries do not currently meet several water quality standards including, variously, bacteria, mercury, temperature, dissolved oxygen and turbidity. These standards assure that beneficial uses of the river and tributaries, such as water contact recreation, fish consumption, resident aquatic life, and fish rearing, are protected. When water quality standards are not met, the federal Clean Water Act requires a Total Maximum Daily Load (TMDL) to be established. A TMDL determines how much pollution can be added to the river without exceeding water quality standards. On September 21, 2006, the Oregon Department of Environmental Quality (DEQ) issued the Willamette Basin TMDL as an Order, and submitted the TMDL to the Environmental Protection Agency (EPA) for approval. EPA approved the Willamette Basin TMDL on September 29, 2006.

Along with other cities and agencies in the Willamette Basin, the City of Eugene has been named by DEQ as a Designated Management Agency in that it has legal authority over sectors or sources contributing pollutants on the approximately 27,763 acres within the City's limits, in that it operates the regional Eugene-Springfield Water Pollution Control Facility, a sewage treatment plant with a permit to discharge stormwater and treated effluent into the Willamette River, and other regional facilities including the Eugene Airport.

This plan identifies strategies, summarized in Appendix A that the City will undertake to minimize TMDL pollutant contributions to surface waters within the jurisdictional authority of the City. It references specific elements of existing programs that are conducted under point discharge permits and distinguishes those efforts from other efforts uniquely responsive to the Willamette TMDL.



## **1. BACKGROUND AND TMDL IMPLEMENTATION PLAN GOALS**

The Willamette River and numerous tributaries do not currently meet several water quality standards including, variously, bacteria, mercury, temperature, dissolved oxygen and turbidity. These standards assure that beneficial uses of the river and tributaries, such as water contact recreation, fish consumption, resident aquatic life, and fish rearing, are protected. When water quality standards are not met, the federal Clean Water Act requires a Total Maximum Daily Load (TMDL) to be established. A TMDL determines how much pollution can be added to the river without exceeding water quality standards.

On September 21, 2006, the Oregon Department of Environmental Quality (DEQ) issued the Willamette Basin TMDL as an Order, and submitted the TMDL to the Environmental Protection Agency (EPA) for approval. The TMDL was approved by the EPA on September 29, 2006. As part of the Willamette TMDL, DEQ developed a Water Quality Management Plan (WQMP) to describe the overall framework for implementing the Willamette Basin TMDL. The WQMP includes a description of activities, programs, legal authorities and other measures for which DEQ and other designated management agencies (DMAs) have regulatory responsibility.

A DMA is “a federal, state or local governmental agency that has legal authority of a sector or source contributing pollutants, and is identified as such by the DEQ in a TMDL.” TMDL implementation activities will be carried out under existing regulatory authorities, programs and water quality restoration plans as well as by TMDL implementation plans that certain DMAs will develop in fulfillment of the requirements of this TMDL.

Along with other cities and agencies in the Willamette Basin, the City of Eugene has been named by DEQ as a DMA in that it has legal authority over sectors or sources contributing pollutants on the approximately 27,763 acres within the City’s limits, in that it operates the regional Eugene-Springfield Water Pollution Control Facility, a sewage treatment plant with a permit to discharge stormwater and treated effluent into the Willamette River, and other regional facilities including the Eugene Airport.

Eugene lies at the upper end of the Willamette watershed. The Willamette River flows for about 6 miles, from River Mile 184 to River Mile 178 through the City. The Willamette River is currently listed as a water quality limited river due to elevated water temperatures, elevated mercury concentration in fish tissues, and elevated bacteria levels all of which at various points on the River may exceed State water quality standards. Other water bodies in the Eugene area that are tributary to the Willamette are water quality limited due to elevated bacteria levels, low dissolved oxygen levels, and elevated turbidity. These waterbodies include Amazon Creek, Amazon Diversion Channel and Fern Ridge Reservoir. As such, the City of Eugene is required to develop a TMDL implementation plan for review and approval by DEQ. The City of Eugene is not responsible for pollution arising from land management activities that occur outside of its jurisdictional authority.

The required components of a TMDL implementation plan are described in OAR 340-042-0080(3) excerpted below.

*Persons, including DMAs other than the Oregon Department of Forestry or the Oregon Department of Agriculture<sup>1</sup>, identified in a WQMP as responsible for developing and revising sector-specific or source-specific implementation plans must:*

- (a) Prepare an implementation plan and submit the plan to the Department for review and approval according to the schedule specified in the WQMP. The implementation plan must:*
  - (A) Identify the management strategies the DMA or other responsible person will use to achieve load allocations and reduce pollutant loading;*
  - (B) Provide a timeline for implementing management strategies and a schedule for completing measurable milestones;*
  - (C) Provide for performance monitoring with a plan for periodic review and revision of the implementation plan;*
  - (D) To the extent required by ORS 197.180 and OAR chapter 340, division 18, provide evidence of compliance with applicable statewide land use requirements; and*
  - (E) Provide any other analyses or information specified in the WQMP.*
- (b) Implement and revise the plan as needed.*

This report comprises the City of Eugene's TMDL Implementation Plan. Management strategies to reduce pollutant loadings are summarized in the TMDL Implementation Plan Matrix in Appendix A.

TMDLs, the WQMP, and associated implementation plans and activities are designed to restore water quality to comply with water quality standards. In this way designated beneficial uses, such as water contact recreation, fish consumption, resident aquatic life, and fish rearing, will be protected. When implemented, the TMDL will result in a cleaner, healthier Willamette river for current and future generations.

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<sup>1</sup> It is explained in the *DEQ TMDL Implementation Plan Guidance for State and Local Government Designated Management Agencies* (May 2007) that the Oregon Departments of Agriculture and Forestry (ODA and ODF, respectively) are exempt from submitting implementation plans because their activities are regulated under other state statutes and rules. Water quality improvements related to agricultural practices (i.e., erosion control, siltation control, animal waste management, and riparian area management) are regulated by Oregon Senate Bill 1010 plans developed under oversight by ODA. Forest practices and timber harvest activities are regulated for sound management of soil, air, water, and fish and wildlife resources by ODF under the Oregon Forest Practices Act (FPA) for private commercial operations, state forest management plans and FPA for state forests, and federal forest plans, resource management plans, and water quality restoration plans for federal forests.



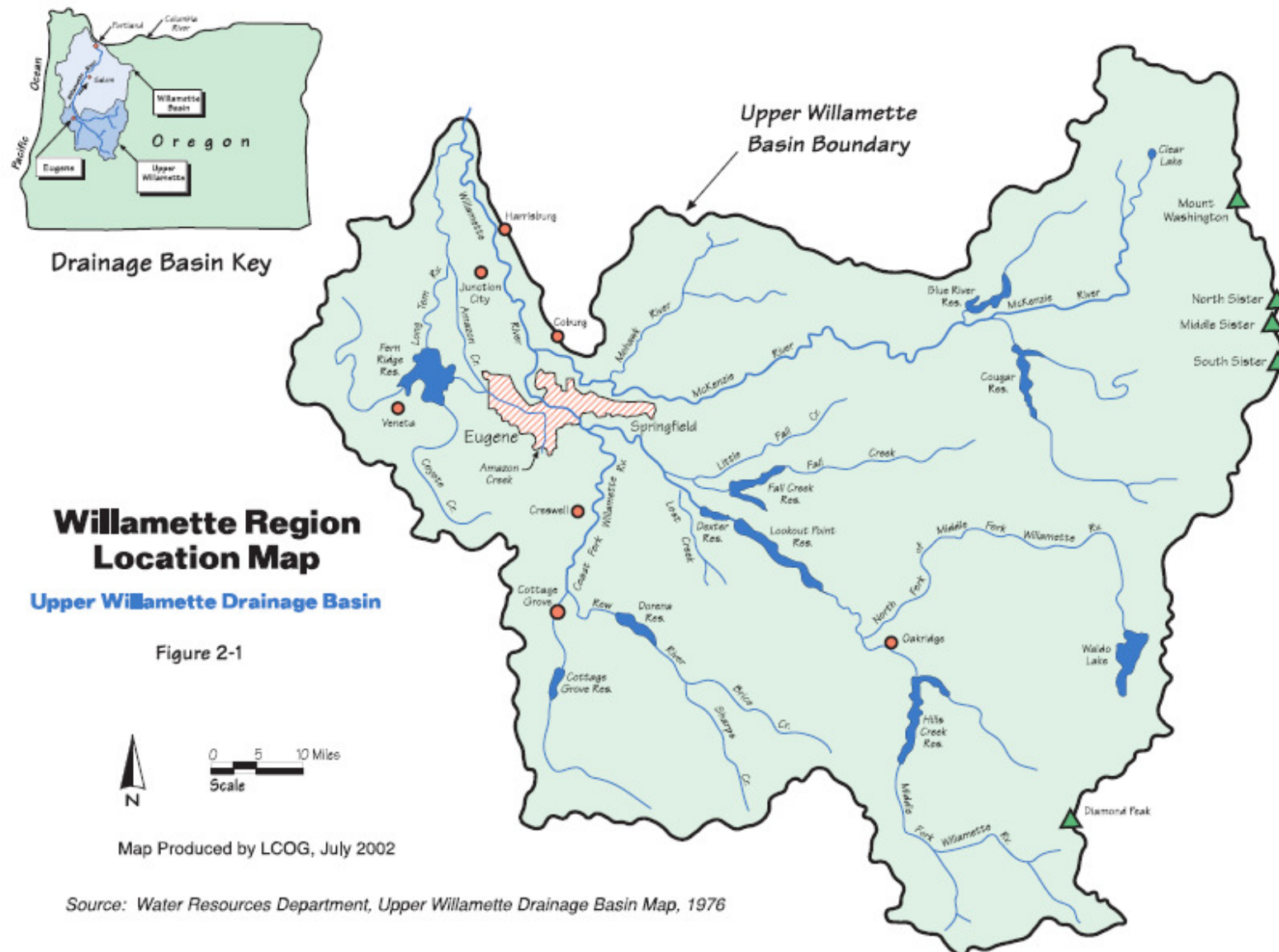
## 2. CITY OF EUGENE

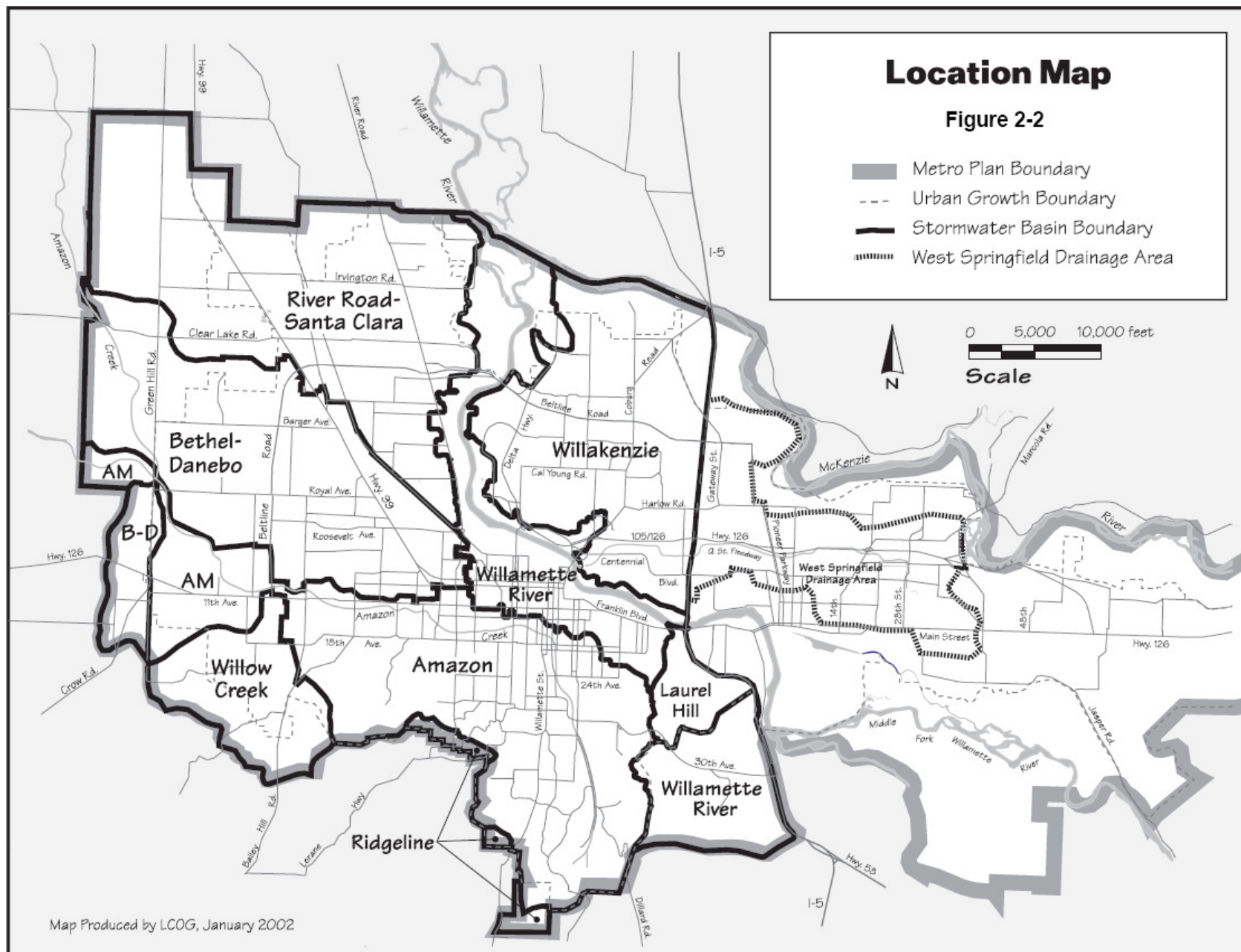
### a. Regional Drainage Context

Eugene is located in the western third of the Upper Willamette Drainage Basin as shown on Figure 2-1. Drainage in the southern Willamette Valley is a combination of natural and built systems that have evolved over time. The natural system is composed of rivers, waterways, and a series of interconnected and isolated ponds and wetlands. Historically, the natural system had an extensive floodplain that frequently experienced over-bank flooding. The built drainage system includes a series of dams, pipes, and waterways that were constructed to contain over-bank flooding, and to retain water for recreational and irrigation purposes. The primary drainage features of the Upper Willamette Drainage Basin are: Main Stem of the Willamette River, Middle Fork of the Willamette River, Coast Fork of the Willamette River, McKenzie River, Amazon Creek, Amazon Diversion Channel, Coyote Creek, and the Long Tom River. From 1940 to 1960, the U.S. Army Corps of Engineers built nine dams on this system, including the Fern Ridge Reservoir which receives runoff from the City of Eugene via the Amazon Diversion Channel.

The cities of Cottage Grove, Creswell, and Springfield are all upstream from the City of Eugene and contribute urban runoff to the regional drainage system. Runoff from Cottage Grove, Creswell, and South Springfield flows through Eugene via the Willamette River. A significant portion of west Springfield's drainage area, approximately 4,800 acres, discharges urban runoff into the Q Street Floodway which is within Eugene's public drainage system. Refer to Figure 2-2.

In the City of Eugene, seven major stormwater drainage basins have been delineated (Figure 2-2): 1) *Amazon Creek*, 2) *Bethel-Danebo*, 3) *Laurel Hill*, 4) *River Road-Santa Clara*, 5) *Willakenzie*, 6) *Willamette River*, and 7) *Willow Creek*. Note that the area depicted on Figure 2-2 is the 2002 stormwater basin planning study area which includes the Eugene city limits and the unincorporated area west of Interstate Highway 5 (I-5) and within the metropolitan plan boundary. The unincorporated portion includes land both within and outside the UGB. The City's responsibilities as a DMA apply only to the limits of its jurisdictional authority.





## **b. City of Eugene Organizational Structure**

The City of Eugene permits and oversees a number of activities that can affect the quality of surface waters. The main activities include: urbanization, sanitary waste collection and treatment, solid waste recycling and disposal, and control of stormwater runoff from public and private lands. These activities are under the jurisdiction of different Departments and Divisions (see Figure 2-3 for City organization chart) within the City, primarily the Public Works and Planning & Development departments.

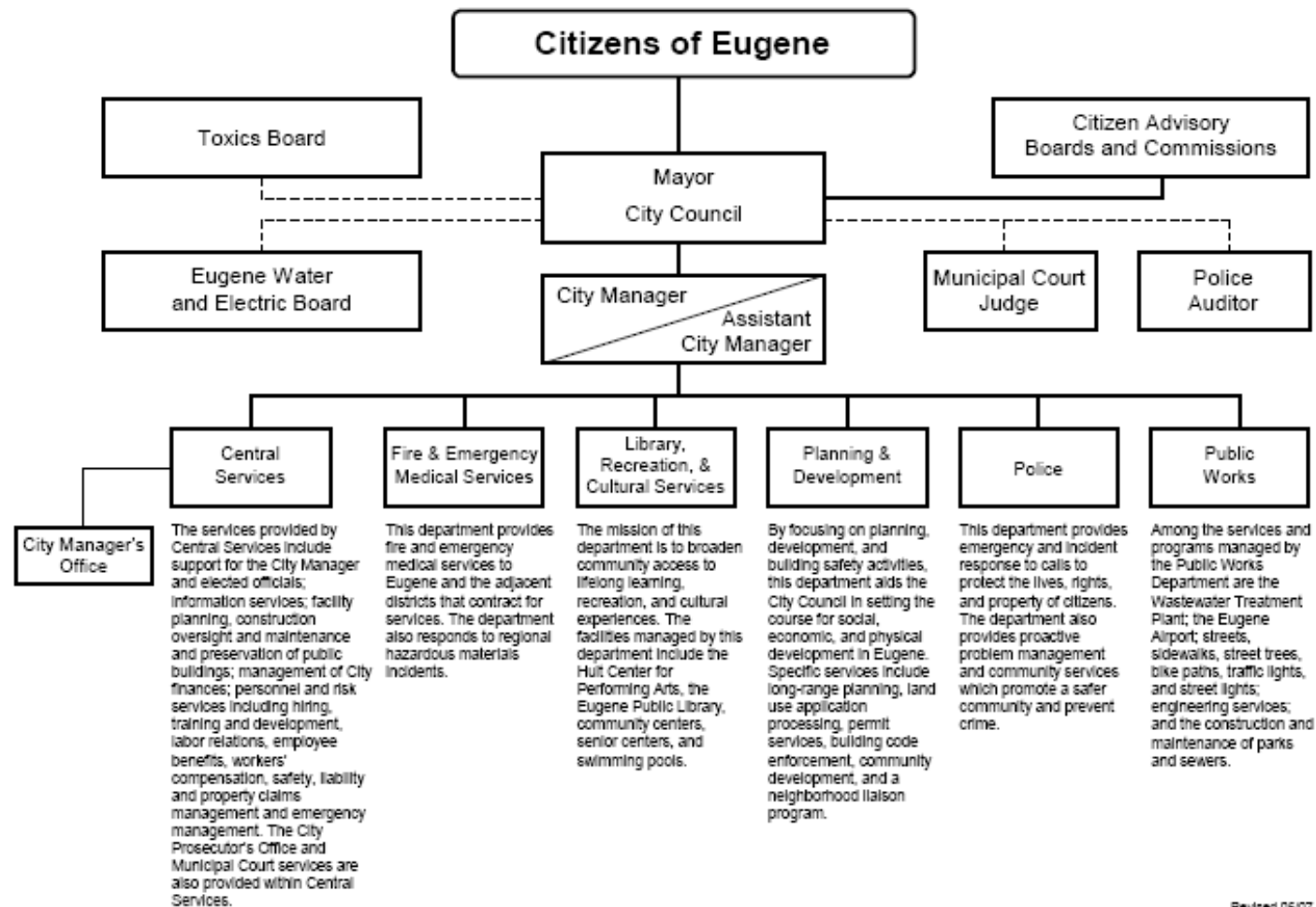
The City of Eugene provides stormwater management services for the City including water quality monitoring, stormwater capital improvements, operations and maintenance of natural and constructed stormwater system, street sweeping, erosion prevention, illicit discharge prevention, tree planting and stormwater education. The Eugene Public Works Department has overall responsibility to implement the elements of the City's Stormwater Management Plan (SWMP), primarily the following five divisions: Administration, Engineering, Maintenance, Parks & Open Space, and Wastewater. The Eugene Planning & Development Department has responsibility for solid waste management, hazardous waste reduction, and implementation of Goal 5 natural resource protections.

The City of Eugene provides operations and maintenance services for the regional wastewater treatment facilities owned by the Metropolitan Wastewater Management Commission. The WPCF is the second-largest treatment facility in the state. (Portland's Columbia River Road Plant is the largest). The cities of Eugene and Springfield each separately maintain their own local sanitary sewer systems. The separate sewer systems come together into a regional system which includes trunk lines, interceptor lines, force mains, pump stations and the Water Pollution Control Facility (WPCF, i.e., the treatment plant) where the wastewater is treated before being discharged into the Willamette River. The regional system also includes the Biosolids Management Facility, Biocycle Farm and Seasonal Industrial Waste Facility. The City of Eugene's industrial pretreatment program regulates potentially contaminated wastewater discharges from commercial and industrial activities to protect the environment and the regional wastewater collection and treatment facilities.

The City of Eugene owns and operates the Eugene Airport, which is located in west Eugene, outside of Eugene city limits and outside of the urban growth boundary.

Figure 2-3

## City of Eugene Organizational Chart



Revised 06/07

### **c. Relevant Water Quality Permits and Programs**

Discharges of surface water pollutants come from both “point” and “nonpoint” sources. Generally speaking, point sources enter surface waters via a pipe or other conveyances, whereas nonpoint sources discharge to surface waters directly or through overland flow (not via pipes or other conveyances). Discharge of industrial wastewater, municipal wastewater, and stormwater into waters of the United States are all regulated through the National Pollution Discharge Elimination System (NPDES) permitting program. The NPDES permitting program is authorized by Section 402 of the Clean Water Act and, in Oregon, the program is administered by the DEQ. The City of Eugene has obtained permits from DEQ under the NPDES program for its point source discharges to surface waters, including:

- Municipal Separate Storm Sewer System (MS4) permit #101244 (a permit issued to the City of Eugene for the municipal stormwater system discharges)
- Water Pollution Control Facility (WPCF) permit #102486 (a permit issued to the Metropolitan Wastewater Commission and the cities of Eugene and Springfield for the regional wastewater treatment plant discharges)
- General 1200Z Industrial Stormwater Permit for WPCF sites (a permit issued to the Metropolitan Wastewater Commission for the wastewater treatment plant located in and operated by the City of Eugene)
- General 1200Z Industrial Stormwater Permit for Eugene Airport (a permit issued to the City of Eugene for the regional airport located outside of the Eugene Urban Growth Boundary but operated by the City of Eugene)

These permits serve as the TMDL Implementation Plans for the discharges they cover. Modifications to activities governed by these permits to address the Willamette TMDLs will occur within the individual permit processes. This TMDL Implementation Plan incorporates relevant activities (i.e. activities that address TMDL-pollutants) so that an overall perspective is achieved. The TMDL Implementation Matrix in Appendix A reflects the current status of these permitted programs. As these permitted programs are adaptively managed to incorporate TMDL considerations, the TMDL Implementation Plan will be updated through the annual reporting process.

#### ***Municipal Separate Storm Sewer System (MS4) permit #101244***

The City of Eugene holds a Phase I NPDES permit <sup>2</sup>for the municipal stormwater it discharges directly into the Willamette River and indirectly into the Willamette River through other local waterways, including Amazon Creek. The permit includes stormwater monitoring and reporting requirements, as well as a set of best management practices that define the City’s Stormwater Management Plan (SWMP). The City received its first MS4 permit in November 1994. In March 2004, the DEQ issued Eugene’s second-term NPDES permit. In response to new requirements including addressing problem pollutants, the City developed pollutant reduction strategies for applicable 303(d) pollutants and made several modifications to its SWMP

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<sup>2</sup> The full name of the permit is National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Discharge Permit. It is referred to as the municipal stormwater permit, NPDES permit, or MS4 permit.

including the addition of a new pilot project to bacteria pilot study, adoption of water quality design standards for new development, and establishing a consistent policy related to the City's use of pesticides and fertilizers. The SWMP Evaluation Report is included in the *Year 2 NPDES Report - Part 2* (City of Eugene, December 2005), and is available on the City's web site at: <http://www.eugene-or.gov/PW>.

The current second-term MS4 permit, which will expire in February 2009, requires that the City address the stormwater-related elements of the Willamette TMDL as a part of the permit renewal process. The City's MS4 permit renewal application was submitted to DEQ on September 2, 2008 (180 days prior to permit expiration), and included a revised Stormwater Management Plan. This TMDL Implementation Plan reflects proposed revisions to the City's SWMP, including in the areas of BMP identification numbering, and the addition of "measurable goals" to the SWMP. The SWMP including the proposed revisions is attached to this document as Appendix B. Since the permit discussions are on-going at the time of the drafting of this TMDL Plan, and since DEQ has not yet reviewed the City's revised SWMP, it is anticipated that the MS4 permit renewal process will result in some additional modifications to the City's SWMP. If the SWMP is further modified before approval of the MS4 permit, the additional modifications to Eugene's SWMP will be reflected in the first annual TMDL Report to DEQ in December 2009.

***National Pollutant Discharge Elimination System (NPDES) Wastewater Discharge Permit #102486 and General 1200Z Industrial Stormwater Permit for WPCF sites***

The Metropolitan Wastewater Management Commission (MWMC) and the cities of Eugene and Springfield hold a NPDES permit for the discharge of treated wastewater to the Willamette River from the Eugene-Springfield Water Pollution Control Facility (WPCF). The MWMC also holds a permit for stormwater discharges from the WPCF and related Biosolids Management Facility site.

***General 1200Z Industrial Stormwater Permit for Eugene Airport***

The City of Eugene also holds a General 1200Z permit for discharges of stormwater runoff from the Eugene Airport site to Amazon Creek and the A1 Channel, both of which eventually flow into the Long Tom River. Total suspended solids benchmarks and best management practices designed to control sediments are expected to reduce mercury and bacteria among other pollutants.

***Administration of NPDES 1200-Z and 1700-A General Permits***

The City currently acts as an agent for DEQ in the administration of 1200-Z (Industrial Stormwater) and 1700-A (Vehicle and Equipment Wash Water) General Permits inside Eugene city limits. The recently updated Memorandum of Agreement (MOA), effective August 14, 2008, outlining the City and DEQ's respective responsibilities, is attached as Appendix C of this document.

***Administration of NPDES 1200-C General Permits***

The City currently acts as an agent for DEQ in the administration of 1200-C (Construction Activities) General Permits inside city limits. The City also administers the Erosion Program outside city limits but inside the Eugene urban growth boundary under the City of Eugene/Lane



County Stormwater Intergovernmental Agreement described in Section 2(e) of this Plan. The current MOA (effective July 7, 1997), outlining the City and DEQ's respective responsibilities, is attached as Appendix D-1 of this document. The 1997 MOA is in the process of being revised and updated. The City's adopted Erosion Ordinance and Administrative Rules are also attached as Appendix D-2 and D-3 for information. Currently, as outlined in the adopted Ordinance and Administrative Rule, projects that disturb one or more acres or are located in a sensitive area must have a permit based on a construction site management plan (CSMP) which shows the measures to be taken to comply with the mandated outcomes. In addition, even smaller construction projects which do not require a permit must meet the objective of the ordinance. All public improvement projects must include a CSMP.

#### **d. Other Related Programs**

##### ***Goal 5***

Oregon's statewide planning goals provide the framework for land use planning within the state. Statewide Planning Goal 5 requires all Oregon cities and counties "to conserve open space and protect natural and scenic resources." The Goal itself, plus Oregon Administrative Rules establish specific procedures and criteria for Goal 5 compliance. The City of Eugene was required by the Oregon Department of Land Conservation and Development (DLCD), through the Metropolitan periodic review work program, to address Goal 5 requirements for wetlands, riparian corridors, and wildlife habitat sites. In November 2005, the Eugene City Council adopted regulations to protect many of the riparian areas, upland wildlife habitat areas, and wetlands on the city's natural resources inventory maps. The Goal 5 study area included all of the Eugene Urban Growth Boundary area, excluding sites that were previously considered for protection in the West Eugene Wetlands Plan (WEWP) area. The Lane County Board of Commissioners followed with adoption of similar regulations for protected habitats in the area between city limits and the urban growth boundary in December 2006. A map of the adopted protection designations for the Eugene Goal 5 Wetland, Riparian and Upland Wildlife Habitat Inventories (November 14, 2005) is attached as Appendix E. Land Use Code regulations that apply to the designated Goal 5 sites can be found in Chapter 9 of the Eugene City Code (see Appendix F for Table of Contents; full text of the City Code can be found at the City's web site: <http://www.eugene-or.gov> and follow link to "Eugene Code").

##### ***Goal 6***

In addition to the federal Clean Water Act regulations, Oregon Statewide Planning Goal 6 requires the City to maintain and improve water quality. As one mechanism for helping to address the Willamette TMDL, and for implementing Goal 6, City staff have proposed establishing a /WQ (Water Quality) overlay zone for waterways with a significant relationship to 303(d)-listed streams that do not already fall within the Goal 5 protections. The proposal is one element of the City's overall plan to protect and improve water quality in its local area waterways. If adopted by the City Council, the proposed ordinance would amend the City's Land Use Code to establish and apply a Water Quality (/WQ) Overlay Zone that would regulate uses and activities within and adjacent to the approximately 13.6 miles of waterways that have a significant relationship to water quality impaired waterways that are not otherwise protected (e.g. by Goal 5 natural resource protections). The proposal was initiated in 2006 and has received considerable input from the general public and protected property owners, as well as staff within



the Public Works and Planning & Development departments. On March 31, 2008, the Eugene Planning Commission recommended that the Eugene City Council adopt the proposed ordinance. The Eugene City Council held a public hearing on May 19, 2008 and worksessions on May 14 and June 18. At the June 18 worksession City Council directed that, before proceeding, staff return with an estimate of the cost to acquire conservation easements on the identified properties as an alternative approach to a regulatory protection. The Water Quality Protected Waterways agenda item including consideration of an alternative “conservation easement” approach to protection, will be considered in a future worksession tentatively scheduled for January 28, 2009.

### ***Sustainability***

The City is committed to promoting a sustainable future that meets today’s needs without compromising the ability of future generations to meet their needs. The City's sustainability efforts cover three broad areas: Social Equity, Environment, and Economy. Many of the community focused and internal initiatives the City undertakes have a component of all three aspects of sustainability.

The City established a Sustainability Commission in March 2007 following a recommendation from the Mayor’s Sustainable Business Initiative taskforce. The Mission Statement of the Sustainability Commission is: to create a healthy community now and in the future by proposing measurable solutions to pressing environmental, social and economic concerns to the City of Eugene, its partners and its people.

The Commission acts as a policy advisory body to the Eugene City Council and City Manager in the initiation or development of programs that will create or enhance sustainable practices within the community. The commission advises on policy matters related to:

- Sustainable practices;
- Businesses that produce sustainable products and services;
- City building design and infrastructure; and
- Related issues that directly affect sustainability efforts considered by the city council.

More information on the City’s Sustainability Program can be found on the City’s web site at: <http://www.eugene-or.gov> and follow links to “Sustainable Eugene.”

### ***Low Impact Development***

In early 2007 the City conducted a review of its implementation of low impact development (LID) practices. The focus of the comprehensive review was to identify barriers and regulatory or incentive-based approaches to increase the use of LID practices for stormwater management. The review team identified areas of regulation and programs with strong relevance to LID objectives and elements, identified the extent to which existing regulations and programs already implemented LID practices, and then identified the potential opportunities and barriers to increase use of LID practices. Key findings included:

- The City has adopted and implemented a broad spectrum of policies, plans, regulations, standards and programs which promote to the use of LID practices.

- While the degree of the City’s existing LID implementation is substantial, a variety of potential opportunities exist to increase use of LID. Primary options for increasing the use of LID practices for stormwater management include:
  - Potential land use code amendments in the areas of stormwater development standards, lot coverage with impervious areas, existing landscape & tree preservation, and waterway protection;
  - Continued implementation of green building and stormwater education programs;
  - Modifications to public improvement design standards and manuals;
  - Development and enhancement of incentive programs.
- Modest incentives for increasing LID practices currently exist; more substantive incentives may be feasible with commitment of additional resources.
- Barriers to increasing use of LID practices include competing demands for resources, complexities of implementing changes to regulations and existing programs, and challenges to balancing and integrating LID objectives with other City initiatives and priorities.

The results of the assessment were presented to the Eugene City Council in September 2008 for consideration of options to increase the use of LID practices in the community. The City Council decided to move forward with efforts to increase implementation of LID practices through administrative adjustments, additional integration of LID practices with other initiatives, development of proposals for land use code amendments, and development of proposals for other program enhancements. Staff is moving forward on this work. The LID review is reflected in the revised 2008 SWMP (Appendix B) for BMP E4 – Stormwater Development Standards, and the TMDL Implementation Matrix (Appendix A).

#### **e. Regional Partnerships**

##### ***Stormwater Management***

EPA adopted rules to implement “Phase II” of the municipal stormwater permitting program in December 1999. Phase II expanded the MS4 permitting program to include smaller communities located in United States census-defined urban areas, thus incorporating Springfield and Lane County Oregon. Phase II rules require communities to develop, implement and enforce stormwater management programs that address six minimum measures:

- Public education and outreach
- Public participation/involvement
- Unlawful discharge detention and elimination
- Construction site runoff control
- Post-construction site runoff control
- Pollution prevention/good housekeeping

The City of Springfield and Lane County have developed their respective Stormwater Management Plans and were issued Phase II MS4 permits in 2007. In anticipation of the Lane County Phase II stormwater permit, and for the mutual benefit of both agencies, Lane County and the City of Eugene entered into an intergovernmental agreement (IGA) in April 2004 to collaborate on stormwater program activities in the jurisdictional area outside of the Eugene city limits and within the Eugene urban growth boundary. The IGA, and associated amendments, are attached as Appendix G to this document. The IGA will be amended again to reflect the proposed SWMP changes submitted with the City's permit renewal, once DEQ has issued the City's third-term MS4 permit and any associated SWMP changes have been made. Under the current IGA, the City of Eugene and Lane County are partnering to complete the River Road – Santa Clara Stormwater Basin Master Plan. Other partnership activities under the IGA include stormwater education, erosion prevention, and illicit discharge detection and elimination. In addition to informal communication and collaboration on a variety of topics related to water quality, the cities of Eugene and Springfield also partner on issue-specific public outreach and education efforts, such as proper disposal of pet waste.

### ***Metro Waterways Study***

The Cities of Eugene and Springfield, Lane County, and Eugene Water & Electric Board are partners on the Metro Waterways Study, and General Investigation Study led by the U.S. Army Corps of Engineers. The Metro Waterways Study is a multi-year study for identifying and evaluating problem areas and opportunities related to the function and health of waterways within the greater metropolitan region of Eugene and Springfield. The study is examining issues related to flood protection and drainage management, conservation of wildlife and aquatic habitat, water quality, open spaces, and recreational and educational opportunities. The eventual goal of the study is to identify and select specific enhancement projects designed to fix problems and improve overall conditions of metro area waterways. The first phase of the study has focused on the Amazon Creek watershed in the Eugene area and the Cedar Creek watershed in the Springfield area and is nearing completion. For more information, see the project web site at: <http://metrowaterways.org/>

### ***Long Tom Watershed Council***

The City of Eugene and the Long Tom Watershed Council continue to partner on watershed restoration efforts, on a project-specific basis. A recent example is partnering to implement stream enhancements at the Wild Iris Ridge, a 220 site in west Eugene. The City contributed funds and in-kind services, including assistance with the application of a grant for the LTWC from the Oregon Watershed Enhancement Board (OWEB). The Long Tom Watershed Council recently completed implementation of the first phase OWEB grant work including removing invasive species, and recently received the second phase OWEB grant for the continuation of restoration activities. The City and Long Tom Watershed Council are also exploring opportunities to collaborate on stormwater education activities within Eugene's city limits, possibly related to the use of pesticides and fertilizers on residential properties. In addition to collaboration on restoration projects and educational activities, the Long Tom Watershed Council recently investigated the potential for accomplishing water quality improvement in the Willamette River through ecosystem restoration activities within the Long Tom Watershed, with an emphasis on shading the Long Tom River downstream from Fern Ridge Reservoir. The

preliminary findings are attached as Appendix H (*Ecosystem Restoration in the Long Tom River Basin for Water Quality Improvement in the Willamette River – Preliminary Findings*, Long Tom Watershed Council, March 2008). Follow-up on the investigation, to explore options and partnership opportunities for ecosystem restoration to off-set impacts to the Willamette River (for example, from the regional wastewater treatment facility) is included as a task in the TMDL Implementation matrix in Appendix A.

#### **f. Public Involvement**

There are many opportunities for public involvement in the City of Eugene's TMDL strategies. Recent new initiatives in the stormwater program are examples of the nature and extent of public outreach conducted by the City. One example is the public outreach leading up to adoption of Land Use Code Changes to implement new stormwater development standards in 2006. Leading up to the adoption process, significant public outreach was conducted, including convening a Stormwater Department Advisory Committee to review a draft ordinance, and outreaching to the design/development communities as well as the general public for input on the proposed ordinance and Stormwater Management Manual.

Another example of the nature and extent of public outreach is for the proposed Water Quality Protected Waterways, a proposal to establish setback protections on waterways with a significant relationship to those on the state of Oregon's 303(d) list that are not already protected by local ordinances. Significant outreach to affected property owners, the general public, and interested person, has been on-going since June 2006 when the proposal was initiated, and will continue until the City Council makes a decision on the proposal in mid-2009. Press releases, display ads and public notices in the newspaper, direct mailings and a web site which contains an interactive property-specific map of the proposed setback area, are some examples of the techniques used to engage and inform the community.

Another recent public outreach effort was conducted for the City's MS4 permit renewal submittal. A press release, published notice and display ad in the local paper, and web site information was provided to engage the community in the results of a stormwater program evaluation and recommended changes for the renewal submittal to DEQ. Comments received, and responses to them, are documented in the submittal sent to DEQ on September 2, 2009.

The City's various program web pages are updated frequently, to keep the community informed of new developments and of where to go or who to contact for what information. One example of the City's web site is the stormwater program web page which may be found by going to the City's main web page and following the links to: Departments > Public Works > Stormwater.

### 3. WATER QUALITY ASSESSMENT

#### a. Water Quality Limited 303(d) Listings Addressed by TMDLs

Table 2-1 below identifies waterbodies addressed by the 2006 Willamette TMDLs that lie within or near the City of Eugene and may be affected by activities within the City of Eugene's jurisdiction. The table also indicates the river miles affected, the TMDL parameter, and the season affected by the listing.

**Table 2-1. Water Bodies and TMDL Pollutants**

Subbasin	Waterbody Name	River Miles	Parameter	Season
Upper Willamette	Willamette River	50.6 to 186.5	Temperature	Year Round
Upper Willamette	Willamette River	0 to 186.4	Bacteria	Fall/Winter/ Spring
Upper Willamette	Willamette River	174.5 to 186.4	Mercury	Year Round
Upper Willamette	A3 Channel	mouth to headwaters	Bacteria	Year Round
Upper Willamette	Amazon Creek	0 to 22.6	Bacteria	Year Round
Upper Willamette	Amazon Creek Diversion Channel	0 to 3.5	Bacteria	Year Round
Upper Willamette	Amazon Creek Diversion Channel	0 to 3.5	Mercury	Year Round
Upper Willamette	Amazon Diversion Channel	0 to 1.8	Dissolved Oxygen	Spring/Summer/ Fall
Upper Willamette	Fern Ridge Reservoir /Long Tom River	0 to 24.2	Bacteria	Fall/Winter/ Spring
Upper Willamette	Fern Ridge Reservoir /Long Tom River	24.2 to 31.8	Turbidity	Year Round
Upper Willamette	Long Tom River	0 to 24.2	Temperature	Summer

#### b. TMDL Pollutants and Potential Sources of Pollutants within the City of Eugene's Jurisdiction

TMDL pollutants in the vicinity of the City of Eugene's jurisdiction include bacteria, mercury, turbidity, dissolved oxygen, and thermal loading (heat). The potential sources of these pollutants, as well as why these pollutants are of concern, are provided below. More detailed

information about sources and impacts of these pollutants can be found in Chapters 2 (Willamette Basin Bacteria TMDL), 3 (Willamette Basin Mercury TMDL), 4 (Temperature-Mainstem TMDL and Subbasin Summary) and 10 (Upper Willamette Subbasin TMDL) of the *Willamette Basin TMDL* (DEQ, 2006).

### ***Thermal Loading (Heat)***

Potential sources of thermal loading or heating of receiving waters include the removal or disturbance of shade-producing riparian vegetation along streams, channel modification and loss of channel complexity, treated wastewater and industrial discharges to surface waters, warming of urban runoff across unshaded impervious surfaces, water extraction, and dam and reservoir operations.

### ***Concerns Associated with Increased Temperatures***

At times, the Willamette River and its tributaries are too warm to support healthy salmon and trout populations. Some of these cold water fish including lower Columbia coho, spring Chinook, winter steelhead, and bull trout are threatened with extinction and elevated stream temperatures have contributed to their decline. Warm water interferes with adult salmon and trout migration and spawning. Warm water also decreases chances of juvenile survival, affects egg and embryo development, alters juvenile fish growth rates, and decreases their ability to compete with temperature-tolerant fish species for habitat and food. Salmon and trout are also more susceptible to disease when water temperatures are elevated.

### ***Bacteria***

Potential sources of bacteria in Eugene's waterways include:

- Wildlife animal waste (nutria, mice, squirrels), bird waste, domestic pet waste, and human waste carried in stormwater runoff.
- Sediment (bacteria tend to associate with soil particles and settle out of the water, but can accumulate and concentrate in deposited sediments, presenting a threat to health and safety if the sediments are stirred up.)
- Illicit cross connections between stormwater and wastewater systems.

Other common sources of bacteria not believed to be an issue for the City of Eugene include:

- Wastewater discharges (e.g. failing septic systems; leaky pipes; sewer overflows), where existing programs, city code, and enforcement are in place to address these potential sources.
- Illegal dumping of sanitary waste (RVs, septic haulers), where existing programs at the regional Water Pollution Control Facility are well established and utilized.
- Livestock waste, not applicable within Eugene city limits. Lane County fairgrounds stormwater system has been upgraded to include diversions to sanitary wastewater system for times when such diversion is necessary.

### ***Concerns Associated with Bacteria***

Bacteria is a concern because people can be affected by bacteria present in water when engaging in water activities such as swimming, wading, wind surfing, water skiing, boating, or fishing. Ingestion or contact with water contaminated with bacteria may cause skin and respiratory ailments, gastroenteritis and other illnesses in humans.

## *Mercury*

Mercury is naturally occurring in soils; one likely source is erosion from construction sites. Contributions may also come from organic detritus (e.g., tree leaves and needles), and airborne deposition. Anthropogenic activities also affect mercury concentrations in receiving waters. Further study is necessary to characterize relative mercury contributions to receiving waters.

Potential sources of mercury in Eugene's waterways include:

- Household items containing mercury: thermometers; thermostats (non-electronic); fluorescent and other mercury vapor lighting (metal halide, high-pressure sodium and neon bulbs); automotive headlamps – (blue tint when lit); pilot light sensors (in some gas appliances: stoves, ovens, clothes dryers, water heaters, furnaces, space heaters); gauges (barometers, manometers, blood pressure and vacuum gauges); switches and relays (in some chest freezers, pre-1972 washing machines, sump and bilge pumps, electric space heaters, silent light switches, vehicles and farm equipment); clothes irons (automatic or tilt shut-offs); elemental mercury; vintage toys (toy drawing screens and mercury maze games); LA Gear® athletic shoes (made before 1997 with flashing lights in soles); batteries (mercuric oxide and some alkaline batteries); paint (latex manufactured before 1990, and some oil base-paints); Thimerosal or merbromin (in some antibacterial products).
- Mercury is naturally occurring in soil and water within the southern Willamette Basin. A significant source of mercury in the MS4 is likely from stormwater overland flow and erosion of disturbed soils. Sediments containing mercury may also be remobilized through re-suspension.
- Wetlands are significant sources of methyl mercury.
- Leaf litter
- Off-site vehicle tracking of construction soil onto paved surfaces.
- Stormwater mobilization of airborne particulate deposited onto impermeable surfaces.
- Geothermal springs are significant sources of Hg in the Willamette Basin.
- Mercury thermometers, manometers, and barometers in use by the public and school systems
- Mercury amalgam and associated dental wastes
- Automobile scrap yards
- Trace quantities of mercury are found in pesticides and fertilizers.
- Gold mining within the Willamette Basin
- Legacy site activities – Historical surface and subsurface activities have the potential to mobilize mercury via overland flow of stormwater or through subsurface interaction with groundwater. The A-3 Channel and Willamette River traverses industrial land use areas with confirmed or suspected hazardous substance releases.

## *Concerns Associated with Mercury*

The accumulation of mercury in fish is a well recognized environmental problem throughout the United States. Mercury is a potent toxin that can cause damage to the brain and nervous system. Small children and the developing fetus are most sensitive to mercury's toxic effects. The primary way that humans are exposed to mercury is through the consumption of fish or seafood containing elevated levels of mercury.

### ***Dissolved Oxygen***

Pollutants such as nutrients, metals, and organic materials, deplete dissolved oxygen in the stream which directly affects its ability to support aquatic life. In this regard, dissolved oxygen can be used to assess overall water quality in terms of pollutants in that low dissolved oxygen concentrations can be indicative of high pollutant concentrations. An important factor controlling water's ability to retain dissolved oxygen is water temperature; high stream temperatures inhibit the ability of water to retain dissolved oxygen within the spaces between water molecules. During dry summer months water temperature may be the predominant factor in depleting dissolved oxygen, while during wet winter months pollutants transported by stormwater may be the predominant factor.

Potential sources of oxygen consuming pollutant and thermal loading in Eugene's waterways include:

- Loss of riparian vegetation and resultant increases in temperatures. The increased molecular activity of the warm water pushes the oxygen molecules out of the spaces between the moving water molecules.
- Bacteria and an excess amount of biological oxygen demand – BOD (untreated sewage, partially treated sewage, organic discharges, anoxic discharges) which use up dissolved oxygen.
- Fertilizer runoff from lawns and gardens. Fertilizer meant for land plants will also promote aquatic plant growth. If the weather becomes cloudy for several days, respiring plants will use much of the dissolved oxygen while failing to photosynthesize. When the increased numbers of aquatic plants eventually die, they support increasing amounts of bacteria which use large amounts of dissolved oxygen.
- Loss of channel complexity through widening, straightening and smoothing out of channel roughness for capacity enhancements.
- Backwater conditions from Fern Ridge during certain times of the year may also be a contributing factor.

### ***Concerns Associated with Low Dissolved Oxygen***

Amazon Creek and the Amazon Diversion Channel experience excessive algal growth due to excessive solar radiation levels, high temperatures, high nutrient concentrations, and low flows. Excessive growth of algae and other autotrophs in natural waters can result in significant diel fluctuations in DO and pH which may adversely impact aquatic life. Low oxygen levels can suffocate aquatic organisms, while excessively high or low pH levels can cause toxic effects ranging from growth and reproduction limitations to death.

### ***Turbidity***

Turbidity is directly related to Total Suspended Solids. Fine clay soils in the Amazon watershed are easily suspended when disturbed, and do not settle out easily or quickly. Potential sources of turbidity in Eugene's waterways include:

- Construction-related activities
- Erosion caused by increased runoff volumes and peak flows caused by urbanization
- Erosion caused by the removal or reduction of streamside vegetation



### *Concerns Associated with Turbidity*

Excessive fine particulate material in streams can have a number of undesirable effects on the stream biota (Mulvey and Hamel, 1998). It can decrease primary productivity by smothering, abrading or shading photosynthesizing organisms. Excessive fine particulate material can deposit and adversely impact macroinvertebrate assemblages by filling in habitat space and reducing oxygen supply. Excessive fine particulate material may also harm fish and amphibian communities by covering respiratory surfaces, smothering eggs laid in spawning gravel, trapping emerging newly hatched fry in spawning gravel, decreasing food availability and visual feeding efficiency, and by filling in pools and interstitial habitat spaces.

#### **4. TMDL MANAGEMENT STRATEGIES**

This section includes a general description of the management strategies for each TMDL pollutant. Appendix A includes a detailed list of activities implemented or planned by the City of Eugene for each TMDL pollutant to carry out the strategy described below. The Appendix A matrix includes all of the City of Eugene's activities that address the Willamette Basin TMDL pollutants, and indicate for each strategy:

- The TMDL pollutant(s) addressed (the strategy either “clearly addresses the TMDL” or “possibly addresses the TMDL”)
- The watershed(s) within which the strategy is conducted (Amazon watershed or the Willamette River watershed, or both), and
- Whether the primary driver for the strategy is another permit or program (“x”) or the Willamette Basin TMDL (“X”).

As expressed in Section 2c, the discharge of industrial wastewater, municipal wastewater, and stormwater into waters of the United States are all regulated through the National Pollution Discharge Elimination System (NPDES) permitting program. The City of Eugene's permits under the NPDES program for its point source discharges to surface waters, including the Municipal Separate Storm Sewer System (MS4) permit, the MWMC NPDES wastewater discharge permit (a permit issued to the Metropolitan Wastewater Commission and the cities of Eugene and Springfield), the General 1200Z Industrial Stormwater Permit for WPCF sites (a permit issued to the Metropolitan Wastewater Commission), and the General 1200Z Industrial Stormwater Permit for Eugene Airport all serve as the TMDL Implementation Plans for the discharges they cover. In order to provide an overall perspective on the City's efforts to address the Willamette TMDL, however, this plan describes strategies from these other permits. As a consequence, where this plan includes a description of a strategy from another permit, that description will change as the strategy evolves under the other permit (for example, through adaptive management).

### ***Temperature Management Strategy***

Eugene's proposed temperature management strategy is combination of meeting wastewater treatment facility discharge permit conditions and large industrial permitted discharges with respect to temperature, exploration of opportunities for ecosystem restoration to off-set temperature impacts of wastewater treatment facility discharges, implementing streamside buffers to protect existing riparian vegetation and other water quality attributes, and enhancing streamside shading through existing programs.

**Table 4-1. Temperature Strategy Elements**

Temperature Strategy Element	Governing Permit/Program
1. Meet wastewater treatment facility NPDES permit conditions as they relate to temperature.	NPDES – WPCF permit
2. Consider adoption of an ordinance to establish setback buffers by means of a Water Quality Overlay Zone on certain waterways with a significant relationship to 303(d) listed streams, and which are not already protected by some other means (namely Goal 5).	TMDL, Goal 6
3. Track and support the implementation of Goal 5 natural resource waterway protections.	Goal 5
4. Temperature trading feasibility - Explore options and partnership opportunities for ecosystem restoration to off-set temperature impacts, for example the from the regional wastewater treatment facility	NPDES – WPCF permit , TMDL
5. Enhance streamside shading - Document existing planting plans and programs that relate to tree and shrub planting including: Amazon Creek plant community restoration plan (P3 <sup>3</sup> ); tree planting code requirements; Neighborwoods; Stream Team (P1); Natural Resource Maintenance planting efforts (P4); Stormwater Management Manual (E4). Include in program adaptive management activities and evaluation of opportunities to enhance streamside shading.	NPDES MS4 permit , TMDL
6. Seek opportunities to implement projects to restore Eugene's waterways for multiple benefits including enhanced shading via the Metro General Investigation Study being done in partnership with the Corps of Engineers, City of Springfield, EWEB and other partners (E1).	NPDES MS4 permit , TMDL
7. Pursue protection of riparian vegetation including through acquisition of high quality stream corridors at risk to development impacts (BMP E1).	NPDES MS4 permit, TMDL
8. Develop TMDL web page, including links to related web sites, the City's TMDL Implementation Plan, and staff contact information.	TMDL

<sup>3</sup> Best management practices (BMPs) as described in the City of Eugene's Draft 2008 Stormwater Management Plan and referenced in Appendix A of this document.

### ***Bacteria Management Strategy***

Eugene's proposed bacteria management strategy is a combination of targeted education, existing systematic field investigation and illicit discharge programs, existing maintenance practices, recently adopted water quality development standards, proposed water quality waterway protection measures, monitoring to determine natural background bacteria levels, and a relatively new pilot study to confirm bacteria source(s) and to evaluate the effectiveness of BMPs.

**Table 4-2. Bacteria Strategy Elements**

Bacteria Strategy Element	Governing Permit/Program
1. Education and outreach related to the bacteria problem, likely sources of bacteria in Eugene's waterways over which the City has some control, and appropriate strategies for keeping the pollutant out of our waterways, e.g. proper pet waste disposal (BMPs A1, P1).	NPDES MS4 permit
2. Support existing systematic field investigation program and illicit discharge programs (BMPs M1, M2, M7).	NPDES MS4 permit
3. Support existing system maintenance programs (BMPs M3, M5, P5) to remove sediment from the system including pollutants, such as bacteria, attached to the sediment.	NPDES MS4 permit
4. Administer stormwater development standards, including source controls for high pollutant source land uses (BMPs E4).	NPDES MS4 permit
5. Pursue protection of riparian vegetation including through acquisition of high quality stream corridors at risk to development impacts (BMP E1).	NPDES MS4 permit
6. Include in Monitoring Program sampling location(s) representative of natural background conditions.	NPDES MS4 permit
7. Implement bacteria pilot study (P2) in a strategically selected study area to focus efforts to identify source(s) of bacteria, apply various BMPs (e.g. targeted education, riparian vegetation enhancements) to reduce bacteria, and evaluate the effectiveness of the BMPs. Coordinate water quality monitoring with storm event monitoring.	NPDES MS4 permit
8. Comply with MS4 permit conditions related to TMDLs, including establishing benchmarks and bacteria pollutant load reductions, as part of the permit renewal process	NPDES – MS4 permit
9. Meet WPCF NPDES permit conditions as they relate to bacteria.	NPDES – WPCF permit
10. Meet NPDES WPCF 1200-Z permit conditions as they relate to bacteria.	NPDES – WPCF 1200Z permit
11. Consider adoption of an ordinance to establish setback buffers by means of a Water Quality Overlay Zone on waterways with a significant relationship to 303(d) listed streams, and which are not already protected by some other means (namely Goal 5).	Non-point source / TMDL / Goal 6
12. Track and support the implementation of Goal 5 natural resource waterway protections.	Goal 5
13. Develop TMDL web page, including links to related web sites, the City's TMDL Implementation Plan, and staff contact information.	TMDL

### ***Mercury Management Strategy***

Eugene's proposed mercury management strategy is a combination of the existing erosion control program and other programs that include activities to address soil erosion and bank stabilization, existing maintenance practices, existing household hazardous waste program, targeted education and outreach, new water quality development standards, proposed water quality waterway protection measures staying abreast of developments in the field regarding most likely sources of mercury in urban stormwater runoff, and monitoring to determine the relationship between mercury and Eugene's stormwater runoff.

Additional mercury reductions may be realized by the State of Oregon's efforts to address legacy contributions. The state's Environmental Cleanup Site Information database lists all sites having known or potential contamination from hazardous substances; of those listed over 50 sites in Eugene have confirmed or suspected pollutant releases. The state's environmental cleanup-site information database includes cases whereby surface or subsurface confirmed or suspected pollutant releases occurred prior to implementation of hazardous substances regulatory controls. Investigation of many of these cases by state authorities is ongoing and in the long term should result in site remediation, however based upon input from DEQ staff<sup>4</sup>, it is expected that only a small fraction of these sites represent potential sources of mercury.

**Table 4-3. Mercury Strategy Elements**

Mercury Strategy Element	Governing Permit/Program
1. Support the erosion control program, tree planting program, and vegetation management program (BMPs E2, P3, P4) to keep disturbed soils and associated naturally occurring trace metals such as mercury out of Eugene's stormwater system.	NPDES MS4 permit
2. Support existing system maintenance efforts, including system cleaning, leaf pick up and street sweeping (BMPs M3, M5, P5 <sup>5</sup> ) which are effective means of preventing leaf litter and road particulate that may contain mercury from entering the MS4 system.	NPDES MS4 permit
3. Support Lane County's existing Household Hazardous Waste program (BMP B1) to ensure proper disposal of household items that may contain mercury.	NPDES MS4 permit
4. Support education and outreach related to the mercury problem, sources of mercury, and strategies for keeping the pollutant out of Eugene's waste stream and its waterways (BMP A1).	NPDES MS4 permit
5. Implement and administer stormwater development standards (BMP E4).	NPDES MS4 permit
6. Include in Eugene's Stormwater Monitoring Plan storm-event sampling and analysis for mercury to characterize MS4 runoff. If there is reasonable likelihood that the MS4 runoff causes or contributes to mercury degradation of receiving waters, evaluate monitoring information to identify potential mercury sources and evaluate whether existing BMPs are effective strategies to address mercury. If existing BMPs are not adequate, identify how the SWMP could be adapted to more appropriately address mercury.	NPDES MS4 permit

<sup>4</sup> E-mail entitled "Comments on Eugene's TMDL Implementation Plan" dated May 29, 2008 from DEQ staff.

<sup>5</sup> P5 is a new BMP, proposed as part of the MS4 Permit Renewal Submittal. Draft SWMP pending approval from DEQ at the time of writing of this IP.

7. Comply with MS4 permit renewal conditions related to TMDLs. Implementation of the Willamette Mercury TMDL will take a phased approach, with monitoring requirements expected for the first phase to support DEQ's development of Wasteload Allocations for the second phase. Benchmarks, or estimates of pollutant load reductions to the MS4, will be required subsequent to the development of WLA's for mercury.	NPDES – MS4 permit
8. Meet WPCF NPDES permit conditions as they relate to mercury.	NPDES – WPCF permit
9. Meet NPDES WPCF 1200-Z permit conditions as they relate to mercury.	NPDES – WPCF 1200Z permit
10. Consider adoption of an ordinance to establish setback buffers by means of a Water Quality Overlay Zone on waterways with a significant relationship to 303(d) listed streams, and which are not already protected by some other means (namely Goal 5).	Non-point source / TMDL / Goal 6
11. Track and support the implementation of Goal 5 natural resource waterway protections.	Goal 5
12. Pursue protection of riparian vegetation including through acquisition of high quality stream corridors at risk to development impacts (BMP E1).	NPDES MS4 permit
13. Participate in the implementation of activities as outlined in the 2006 Memorandum of Agreement between the Oregon Dental Association, MWMC, and the cities of Eugene and Springfield to limit the discharge of mercury and mercury bearing dental wastes into the regional wastewater collection system.	TMDL
14. Participate in the School Cleanout campaign, led by Lane County with funding from DEQ, including (but not limited to) the disposal of chemicals and equipment containing mercury (barometers, manometers, thermometers).	TMDL
15. Develop TMDL web page, including links to related web sites, the City's TMDL Implementation Plan, and staff contact information.	TMDL

### ***Dissolved Oxygen Management Strategy***

Eugene's proposed dissolved oxygen management strategy is a combination of targeted educational outreach, existing maintenance practices, existing erosion control program, development of a riparian tree planting plan, water quality development standards, new water quality waterway protection measures, and waterway restoration capital projects.

**Table 4-4. Dissolved Oxygen Strategy Elements**

Dissolved Oxygen Strategy Element	Governing Permit/Program
1. Include information in educational brochures and newsletters about the causes of low dissolved oxygen in receiving waters, and the actions private landowners and businesses can take to minimize depletion of stream water DO (BMPs A1, P1).	NPDES MS4 permit
2. Support existing system maintenance efforts related to system cleaning, open waterway maintenance, street sweeping, leaf pick up, and vegetation management (BMPs M3, M5, P5), to minimize the introduction of oxygen consumers from entering the MS4 system.	NPDES MS4 permit
3. Support the Erosion Control program (BMP E2) to keep sediment and associated oxygen consumers out of the MS4 system.	NPDES MS4 permit
4. Support the development of a riparian tree planting plan (P3) and public lands and vegetation management programs (P4) for enhanced shading and improved DO.	NPDES MS4 permit
5. Administer stormwater development standards, including source controls for high pollutant source land uses (BMP E4).	NPDES MS4 permit
6. Pursue protection of riparian vegetation including through acquisition of high quality stream corridors at risk to development impacts (BMP E1).	NPDES MS4 permit
7. Comply with MS4 permit conditions related to TMDLs, including establishing benchmarks for dissolved oxygen as part of the permit renewal process	NPDES – MS4 permit
8. Seek opportunities to improve channel complexity of Eugene's waterways via the Metro General Investigation Study being done in partnership with the Corps of Engineers, City of Springfield, EWEB and other partners (BMP E1).	Non-point source / TMDL / NPDES – MS4 permit
9. Consider adoption of an ordinance to establish setback buffers by means of a Water Quality Overlay Zone on waterways with a significant relationship to 303(d) listed streams, and which are not already protected by some other means (namely Goal 5).	Non-point source / TMDL / Goal 6
10. Track and support the implementation of Goal 5 natural resource waterway protections.	Goal 5
11. Develop TMDL web page, including links to related web sites, the City's TMDL Implementation Plan, and staff contact information.	TMDL

### ***Turbidity Management Strategy***

Eugene's proposed turbidity management strategy is combination of existing erosion control program and other programs that include activities to address soil erosion and bank stabilization, existing maintenance practices, new water quality development standards, water quality waterway protections, and education to the general public about water quality friendly vegetation management practices, for privately owned and managed waterways.

**Table 4-5. Turbidity Strategy Elements**

Turbidity Strategy Element	Governing Permit/Program
1. Support the erosion control program, tree planting program, and vegetation management program (BMPs E2, P3, P4) to keep disturbed soils and associated naturally occurring trace metals such as lead out of Eugene's stormwater system.	NPDES MS4 permit
2. Support existing system maintenance efforts, including system cleaning, street sweeping (BMPs M3, M5, P5) which are effective means of preventing sediment from entering the MS4 system.	NPDES MS4 permit
3. Administer stormwater development standards including headwater flow controls (BMP E4).	NPDES MS4 permit
4. Pursue stream restoration projects and acquisition of high quality stream corridors at risk to development impacts (BMP E1).	NPDES MS4 permit
5. Education and outreach related to the turbidity problem, sources of turbidity, and appropriate strategies for keeping the suspended solids out of Eugene's stormwater system and its waterways (BMPs A1, P1).	NPDES MS4 permit
6. Comply with MS4 permit conditions related to TMDLs, including establishing benchmarks for turbidity, as part of the permit renewal process	NPDES – MS4 permit
7. Consider adoption of an ordinance to establish setback buffers by means of a Water Quality Overlay Zone on waterways with a significant relationship to 303(d) listed streams, and which are not already protected by some other means (namely Goal 5).	Non-point source / TMDL
8. Track and support the implementation of Goal 5 natural resource waterway protections.	Goal 5
9. Develop TMDL web page, including links to related web sites, the City's TMDL Implementation Plan, and staff contact information.	TMDL



## **5. PERFORMANCE MONITORING, PLAN REVIEW, REVISION, AND REPORTING**

The City of Eugene will report to DEQ annually on the status of management strategies implemented in response to the TMDL. The City would like to work with DEQ to coordinate timelines and reporting format if appropriate, for other related regulatory reports, in particular the MS4 annual report. It is anticipated that the first annual TMDL Implementation Plan report, which will be submitted to DEQ in December 2009, will reflect final revisions to the City's Stormwater Management Plan in response to specific TMDL-related permit conditions. The City of Eugene will continue to perform the stormwater and ambient water quality monitoring required under its MS4 permit and report those results to DEQ in the annual MS4 report.

The City of Eugene will evaluate this Implementation Plan once every five years following submittal. The evaluation will include a review of existing water quality data, performance measures data, and other information to evaluate the effectiveness of the Plan. The evaluation report will include any modifications to the plan including additional efforts to achieve the goals of the TMDL and a timeline for accomplishing them.

In addition, the City will review and revise this Implementation Plan as needed following DEQ reevaluation of the TMDL.

## **6. EVIDENCE OF COMPLIANCE WITH LAND USE REQUIREMENTS**

With one exception, all of the strategies outlined within and listed in the matrix in Appendix A that constitute land use decisions for purposes of ORS Chapter 197 are activities that previously have been determined as consistent with statewide land use requirements. The one exception is the strategy to consider adoption of a water quality waterway overlay zone. As part of the adoption of such an ordinance, findings of consistency with state land use requirements will be provided; preliminary findings already have been developed for the draft ordinance which shows that the draft ordinance is consistent with state land use requirements.

## **7. ADDITIONAL REQUIREMENTS AS INDICATED IN THE WQMP**

### ***Funding***

The majority of the implementation plan measures are already being conducted under existing programs, most notably the stormwater MS4 permit program, the regional wastewater treatment facility programs, and the industrial stormwater permit programs for the WPCF and the Eugene Airport. Funding for implementation of potential ecosystem restoration efforts to off-set temperature impacts of the regional wastewater treatment facility (referenced in the Temperature TMDL Strategy) cannot be estimated at this time given that it is in the early stages of development. The City's second term MS4 permit will expire in March 2009. Conditions of the current permit included evaluation and revision of the SWMP to meet the Willamette River TMDL including establishing benchmarks for TMDL pollutants. The City submitted its permit renewal packet to DEQ on September 2, 1008, including a proposed SWMP, Monitoring Plan and TMDL benchmarks. Depending upon the feedback received from DEQ on the renewal submittal, and the specific conditions of the City's third-term MS4 permit, additional funding needs may be identified.

### ***Legal Authorities***

The City Attorneys' Office has determined that the City has legal authority to implement the management strategies. The City is a home-rule city. Section 4 of the Eugene Charter grants to the City all powers that the constitution or laws of the United States or Oregon allow cities. The Oregon appellate courts recently confirmed that such a grant of power within a city charter means that the city has the authority to undertake any activity that is not prohibited by federal or state constitutions or statutes. Under the Eugene Charter, that power rests primarily with the City Council (which exercises that power principally through adoption of ordinances and resolutions), and with the City Manager (who exercises regulatory power primarily through adoption of administrative rules). The Eugene City Council has adopted a number of ordinances related to implementation of strategies referenced in the City's TMDL implementation plan, and the City Manager has adopted administrative regulations to implement many of those ordinances. The ordinances are codified in the Eugene Code. A copy of the Table of Contents for Chapters 6 (Environment & Health), 7 (Public Improvements) and 9 (Land Use) of the Eugene Code is provided as Appendix F. The complete Eugene City Code is available on the internet at: <http://www.eugene-or.gov>